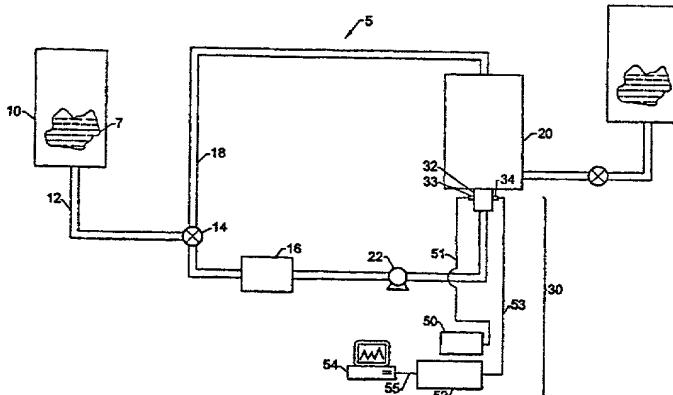


INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 7 : G01N 21/35		A1	(11) International Publication Number: WO 00/67000
			(43) International Publication Date: 9 November 2000 (09.11.00)
(21) International Application Number: PCT/US00/11418		(74) Agents: LEVY, David, J. et al.; Glaxo Wellcome Inc., Five Moore Drive, P.O. Box 13398, Research Triangle Park, NC 27709-3398 (US).	
(22) International Filing Date: 28 April 2000 (28.04.00)		(81) Designated States: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).	
(30) Priority Data: 60/132,042 30 April 1999 (30.04.99) US		(71) Applicant (for all designated States except US): GLAXO GROUP LIMITED [GB/GB]; Glaxo Wellcome House, Berkeley Avenue, Greenford, Middlesex UB6 0NN (GB).	
(63) Related by Continuation (CON) or Continuation-in-Part (CIP) to Earlier Application US 60/132,042 (CIP) Filed on 30 April 1999 (30.04.99)		(72) Inventors; and (73) Inventors/Applicants (for US only): WALKER, Dwight, Sherod [US/US]; Glaxo Wellcome Inc., Five Moore Drive, P.O. Box 13398, Research Triangle Park, NC 27709 (US). MASCHO, John, Anderson, Jr. [US/US]; Glaxo Wellcome Inc., Five Moore Drive, P.O. Box 13398, Research Triangle Park, NC 27709 (US).	
<p>Published</p> <p><i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i></p>			

(54) Title: METHOD AND SYSTEM FOR DETECTING TRACE MATERIALS IN CRYOGENIC LIQUIDS



(57) Abstract

A method for qualitative and quantitative determination of trace impurities in a cryogenic liquid, comprising the steps of (i) measuring the absorption spectrum of the cryogenic liquid by passing light in the infrared region through the cryogenic liquid, the cryogenic liquid absorption spectrum having a first reference energy, (ii) measuring the absorption spectrum of at least one impurity alone by passing light in the infrared region through the impurity, (iii) passing a cryogenic liquid sample into a flow cell, wherein the maximum pressure drop of the cryogenic liquid sample across said flow cell is in the range of 0.5 to 5.0 lb./in.², (iv) measuring the absorption spectra of the cryogenic liquid sample by passing light in the infrared region through the cryogenic liquid sample while the cryogenic liquid sample is within the cell, (v) comparing the cryogenic liquid sample absorption spectra to the cryogenic liquid and impurity spectra, (vi) confirming the presence of the sample absorption spectrum associated with the impurity, the sample absorption spectrum associated with the impurity having a second reference energy, and (vii) determining the concentration (C) of the impurity in the cryogenic liquid sample by the following relationship, $kC = \log \text{second reference energy}/\text{first reference energy}$ where k is a fixed proportionality constant.